

## Six New Reared Species of Bracon (Hymenoptera: Braconidae)

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The collections of the National Museum contain many undescribed Nearctic species of the genus *Bracon* F. My synopsis of the group (Proc. U. S. Nat. Mus., vol. 67, Art. 8, pp. 1-85, 1925) is decidedly out of date, but the preparation of a revision at this time is not practicable. Accordingly, it is necessary to describe isolated species in order to make names available to workers who need them in connection with biological or ecological studies. Six species are described here, three of them reared from lepidopterous larvae, two from larvae of Coleoptera and one from larvae of a species of Hymenoptera.

### *Bracon agathymi*, new species

This most closely resembles *B. platynotae* (Cushman), but it is conspicuously larger; the antennae have more segments; the ovipositor sheath is longer; the basal tergites of the abdomen are more coarsely sculptured, and the eyes are relatively much smaller and the malar space correspondingly longer.

*Female*: Length usually about 4 mm. Temples relatively broad and not receding from eye margins; face three times as wide as distance from antennal foramina to clypeus, its surface coriaceous; opening between clypeus and mandibles large, its transverse diameter subequal to length of malar space, which is more than half the eye height; frons, vertex and temples sculptured like the face; antennae usually 29- to 31-segmented (26-segmented in an unusually small specimen of the type series), slender, even the shortest segments much longer than broad.

Thorax stout, a little wider than head; mesoscutum, scutellum, pleura and propodeum very finely alutaceous; notauli indicated by shallow, densely hairy impressions; mesonotal lobes with scattered hairs, the scutellum rather closely hairy; propodeum without a stub of a median carina at apex; first abscissa of radius at least as long as, usually longer than, the second which is

shorter than first intercubitus and less than one-third as long as third abscissa of radius; radial cell ending a little above apex of wing; second abscissa of cubitus nearly or quite as long as recurrent vein.

Abdomen stout; first tergite largely granularly sculptured; second and base of third rugose, the second noticeably longer than the third; third tergite apically and all of fourth and fifth tergites strongly granularly sculptured; suturiform articulation nearly straight, broad and coarsely foveate; ovipositor sheath longer than hind tibia.

Head brownish yellow, with a large transverse spot on face, and the frons and vertex except at the eye margins, blackish; occiput more or less darkened; antennae dark brown to black, the scape more or less yellow below. Thorax black; wings infumated, weakly so on apical third, stigma and veins dark; legs testaceous or yellowish brown, the tibiae and tarsi piceous to blackish. Abdomen brownish yellow, the first tergite a little darkened.

*Male*: Like the female, but the legs darker, especially the coxae and trochanters; antennae usually 32- to 34-segmented but with as few as 24 segments in one very small specimen of the type series.

*Type*: U. S. National Museum No. 66600.

*Type-locality*: Prescott, ARIZONA.

Described from 9 females (one the holotype) and 4 males reared in 1961 at the type locality from *Agathymus neumocgini* (Edwards); 3 females and 2 males from the Catalina Mts., Pima County, Arizona, reared in May, 1962, from *A. aryxna* (Dyar), and 3 females and 1 male from Marathon, Texas, reared September 27, 1960, from *A. mc Alpinei* (Freeman). All the specimens were reared by Dr. Killian Roever, of the University of Arizona.

### ***Bracon acrobasis*, new species**

This suggests *B. politiventris* (Cushman), which it closely resembles in the antennae, in wing venation and in the sculpture of the abdomen. It differs strikingly from that species, however, in having the thorax coriaceous and more or less dull.

*Female*: Length around 2.5 mm. Head not thin but temples narrow, less than half as wide as eyes, which are large; malar space a little shorter than basal width of mandible; face, frons, vertex, temples and cheeks coriaceous and somewhat dull; antennae normally 22- to 26-segmented, all flagellar segments distinctly longer than broad, the first the longest, the remainder subequal in length but gradually thinner.

Thorax short and stout, dorsally finely coriaceous; notauli indistinct; mesoscutum, including surface of the middle lobe, and the scutellum, thickly hairy; propodeum finely coriaceous, rather shining, and without a distinct stub of a median carina at apex; mesopleuron largely smooth and shining. First abscissa of radius about half as long as the second, the latter much more than half the length of the third which almost attains extreme apex of wing; second abscissa of cubitus very nearly or quite as long as recurrent vein, sometimes even longer.

Abdomen broader than thorax; second tergite slightly longer than third, punctate or with fine reticulate sculpture, and with two longitudinal, slightly rugose grooves medially; suturiform articulation gently arcuate and finely foveolate; third, fourth and fifth tergites very shiny and with more or less very weak, reticulate sculpture; ovipositor sheath a little shorter than hind tibia.

Head yellowish brown, the frons and vertex medially and the occiput darkened; antennae entirely brownish black; thorax usually largely black or blackish, with lateral face of pronotum and lines of notauli yellowish brown; sometimes thorax more extensively yellowish brown, with only mesonotal lobes, propodeum and pectus darkened; legs yellow, the tibiae and tarsi more or less infuscated; wings infumated on basal two-thirds, hyaline apically; abdomen usually dark brown, with the second tergite broadly, and the following narrowly, yellow at the sides.

*Male*: Like the female, but the antennae, the thorax and the abdomen are more slender; the antennae are normally 25- to 29-segmented.

*Type*: U. S. National Museum No. 66601.

*Type-locality*: Monticello, FLORIDA.

Described from many specimens of both sexes reared at the type locality from *Acrobasis caryae* Grote and *A. caryivorella* Ragonot in 1941, 1942 and 1944. The holotype is labeled "Ex *Acrobasis caryae*, Monticello, Fla., v.1941, W. C. Pierce." The Museum also has 3 specimens of this species which were reared from *Acrobasis comptoniella* Hulst at New Lisbon, New Jersey, June 21, 1935, by E. P. Darlington.

### **Bracon rosaceani**, new species

Like *B. acrobasidis*, described just above, this form is superficially most similar to *B. politiventris* (Cushman). It is readily distinguished from that species, however, by its strongly sculptured abdomen, black tegulae, almost completely black head and darker legs.

*Female*: Length around 2.5 mm. Head about as broad as thorax and, seen from above, nearly twice as broad as long; face twice as broad as distance between antennae and clypeus, uniformly coriaceous and somewhat dull; frons, vertex and malar space sculptured like the face; temples and cheeks smooth and shining; malar space one-third as long as eye height and about equal to transverse diameter of opening between clypeus and mandibles; antennae normally 20- to 24-segmented (17-segmented in an unusually tiny specimen); all flagellar segments at least one and one-half times as long as broad.

Mesoscutum and scutellum smooth and shining; middle lobe of mesoscutum bare except for a few hairs anteriorly; notauli very weak but their position indicated by rows of long, closely placed hairs; mesopleuron smooth and polished, hairy; propodeum weakly alutaceous. Hind coxae smooth. First abscissa of radius a little shorter than second which is slightly longer than first intercubitus and less than half as long as third abscissa of radius; radial cell not quite attaining apex of wing; second abscissa of cubitus a little shorter than recurrent vein.

Abdomen broader than thorax; first tergite largely smooth and shiny; second longer than third, granularly sculptured and with a rugulose area medially at base where there are two more or less distinct, short, oblique, rugulose grooves; posterior margin

of second tergite nearly straight; suturiform articulation foveolate; third, fourth and fifth tergites finely granular or coriaceous; ovipositor sheath about as long as hind femur.

Head black, narrowly orange along inner and upper eye margins; antennae and palpi black; mandibles brownish yellow; thorax black; tegulae black; legs black, with only apices of femora and bases of tibiae pale; abdomen black or blackish above, brownish yellow along sides of tergites, the venter pale; wings distinctly infumated on basal two-thirds, clear apically.

*Male*: In general smaller and more slender than female and with the tergites more weakly sculptured; antennae of available specimens 20- to 23-segmented; all flagellar segments twice as long as broad.

*Type*: U. S. National Museum No. 66602.

*Type-locality*: Gresham, OREGON.

Described from 30 females (one the holotype) and 8 males, all reared at the type locality from *Archips rosaceanus* (Harris) in May, June, July and August, 1944. The holotype was reared June 20, 1944 by "J. S. & H. J. O."

### ***Bracon gossypii*, new species**

This species is most similar to *B. nuperus* Cresson but it differs in its relatively shorter second tergite, normally yellow face and thorax, finely sculptured face and shorter ovipositor sheath.

*Female*: Length usually within the range of 2.5 to 3.5 mm. Head thin, twice as wide as long seen from above; eyes very narrow; temples barely receding and at least three-fourths as wide as eyes; face vertical and finely coriaceous except for a smooth spot medially; frons smooth and polished; transverse diameter of opening between clypeus and mandibles more than one and one-half times the length of malar space which is less than basal width of mandible; antennae usually 23- to 26-segmented.

Thorax entirely smooth and polished; notauli weak, subparallel, widely separated at scutellar furrow; propodeum smooth and polished and without a stub of a median carina at apex. Forewing with second abscissa of radius less than twice

as long as first and little more than half as long as third which attains wing margin well before apex; second abscissa of cubitus a little shorter than recurrent vein.

Abdomen as wide as thorax; second tergite shorter than third and usually weakly and very finely longitudinally aciculate but occasionally completely smooth; suturiform articulation nearly straight and finely foveolate; third and following tergites normally smooth and polished, the third occasionally weakly longitudinally aciculate basally; ovipositor sheath barely longer than abdomen.

Yellow; head black or piceous above, sometimes entirely darkened except for the face and cheeks; antennae entirely dark; thorax usually yellow but sometimes with blackish markings on mesonotal lobes, pleura and pectus; legs yellow with hind tibiae and tarsi more or less darkened; wings lightly infumated basally, hyaline at apices, costal margin and stigma conspicuously yellowish, the latter somewhat brownish apically; abdomen yellow.

*Male*: Essentially like the female but averaging smaller in size and usually with the thorax more extensively darkened.

*Type*: U. S. National Museum No. 66603.

*Type-locality*: Bennettsville, SOUTH CAROLINA.

Described from 13 females (one the holotype) and 13 males reared by C. F. Rainwater from boll weevil infested cotton squares at various localities in South Carolina in August and September, 1936, the holotype and allotype on August 26; and 6 females collected on croton weed, Tallulah, Louisiana, August 7, 1944, by G. L. Smith. The National Museum collection contains many additional specimens, most of them reared or collected from cotton, at localities in Georgia, Mississippi, South Carolina, Louisiana, Texas, Florida and Arkansas. Most of the specimens bear labels indicating that the host was thought to have been *Anthonomus grandis* Boh. but there seems to be no firm record of actual rearing from boll weevil larvae.

### **Bracon bruchivorus**, new species

This is very similar to *B. tychii* (Muesebeck) but it differs in its non-receding temples and in having the propodeum, abdomen and hind femora testaceous.

*Female*: Length around 3.5 mm. Head hardly as wide as thorax and not nearly twice as wide as long as seen from above; eyes large; temples more than half as wide as eyes, parallel, not at all receding; face not twice as wide as high; face, frons, vertex and temples smooth and shining; malar space less than one-third as long as eye height and shorter than transverse diameter of opening between clypeus and mandibles; antennae 27- to 31-segmented in the available specimens, the flagellum filiform, apical fourth barely thinner than basal fourth, all flagellar segments subequal in length, the first not longer than the second, and all much longer than broad.

Thorax stout, smooth and polished; mesoscutum glabrous except for long, closely placed hairs in notauli; notauli weak but distinct, strongly convergent but still separated at scutellar furrow; propodeum entirely smooth and polished and without a stub of a median carina at apex. Hind femora relatively broad, about one-fourth as broad as long. Second abscissa of radius twice as long as the first and two-thirds as long as the third which reaches wing margin well before apex; second abscissa of cubitus less than half as long as recurrent vein.

Abdomen a little broader than thorax, smooth and shining; second tergite slightly shorter than third and with two elongate pits or short longitudinal grooves medially at base; suturiform articulation rather broad but not at all foveolate, weakly arcuate medially and curved forward at the sides; ovipositor sheath very nearly or quite as long as abdomen.

Head entirely black, including palpi and antennae, only the mandibles yellowish basally; thorax usually black with propodeum bright testaceous except for a large median basal patch; scutellum and pectus sometimes more or less brownish; anterior and middle legs with coxae, trochanters, bases of femora, tibiae on outer margins and the tarsi, piceous; hind legs testaceous, the coxae usually streaked with black above and below, the trochanters sometimes piceous, the tibiae and tarsi black or blackish; wings infumated, more weakly so apically, stigma and veins brownish black; abdomen entirely testaceous.

*Male*: Thorax, including propodeum, usually entirely black; legs often more extensively darkened than in the female al-

though the hind femora are nearly always testaceous; abdomen sometimes with irregular blackish areas on first, third, fourth and fifth tergites.

*Type*: U. S. National Museum No. 66604.

*Type-locality*: Turlock, CALIFORNIA.

Described from 6 females (one the holotype) and 6 males from the type locality, reared by E. L. Mayer March 4, 1953, from beans infested with bruchids; 2 females and 1 male from Modesto, California, reared from bruchids in blackeye cowpeas by E. L. Mayer December 9, 1952; 4 females and 1 male labeled "Ex *Acanthoscelides* sp. near *fraterculus* (Horn) on lotus, Visalia, California, F. T. Scott;" and 1 female from blackeye cowpeas at Modesto, California, in August, 1952, by L. F. Baker.

#### ***Bracon jani*, new species**

Structurally this is very similar to *B. pini* (Muesebeck), but the antennae are decidedly more slender and usually have fewer segments; the temples are more strongly receding and a little narrower; the second tergite is more weakly, and not longitudinally, sculptured; and the ovipositor sheath is rather abruptly a little broadened on apical fourth, which is not true in *pini*. In color *jani* is generally paler, the head and thorax especially being usually extensively yellow; and the wings are clear hyaline apically.

*Female*: Length around 2.3 mm. Head seen from above nearly twice as broad as long but not thin, the face, in lateral view, strongly receding; face, frons, vertex and temples smooth and shining; temples strongly receding, about half as wide as eyes; length of malar space less than half the transverse diameter of the opening between clypeus and mandibles and not longer than pedicel of antenna; antennae 27- to 29-segmented in the available specimens, all flagellar segments about twice as long as broad.

Thorax entirely smooth and polished; notauli impressed only anteriorly. First abscissa of radius a little longer than width of stigma and more than half as long as second abscissa of radius



which is about half as long as the third; second abscissa of cubitus less than half as long as recurrent vein.

Abdomen short and broad, only a little longer beyond first segment than its greatest width; second tergite about as long as third, weakly confluent punctate medially, smooth laterally, its posterior margin broadly and weakly excavated at the middle; suturiform articulation rather wide but not distinctly foveolate; third tergite with a little very shallow, confluent punctation medially near base; following tergites successively much shorter, smooth and shining; ovipositor sheath a little longer than hind tibia, the apical fourth a little broadened.

Face and cheeks usually testaceous; frons, vertex and occiput more or less piceous; thorax testaceous but with more or less extensive piceous markings, the palest specimen having only the propodeum dark, the darkest being almost entirely piceous; forewing very slightly infumated on basal two-thirds, clear hyaline apically; hind wing with a conspicuous fuscous spot at base of radiellian cell; tegulae yellow; legs including all coxae yellow, with hind tibiae and hind tarsi dusky; abdomen usually largely yellowish but more or less piceous down the middle.

*Male*: Like the female in essential characters; antennae of the only available male 27-segmented.

*Type*: U. S. National Museum No. 66605.

*Type-locality*: Cloquet, MINNESOTA.

Described from 5 females (one the holotype) and 1 male reared by E. Osgood from larvae of the cephid *Janus abbreviatus* (Say), a borer in the twigs of willow and poplar, one of the paratypes January 2, 1961, the other specimens December 22, 1959.